

RESEARCH ARTICLE **Section:** *Economics & Tourism*

Tourism and Economic Growth Nexus in Nigeria: Implication for Economic Diversification

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Abstract

This study aims at investigating the impact of tourism sector on economic growth in Nigeria. Secondary data on gross domestic product, gross fixed capital formation, broad money, total labor force, and international tourism receipts spanning the period 1990 and 2025 were adopted in the study. Applying ADF unit root test and autoregressive distributed lag (ARDL) model technique, the results revealed that the long-run coefficient of gross fixed capital formation indicated a positive impact on economic growth, broad money stock and economic growth depicted positive significant relationship, the long-run coefficient of tourism receipts in Nigeria portrayed a negative relationship with economic growth, and labour force showed a positive significant impact on economic growth in the long run. The study concludes that for the achievement of a long-run relationship between tourism sector and economic growth in Nigeria, a synergy of all levels of government must be achieved. The government should allocate an appropriate budget to develop the infrastructure and recreational points in the areas rich in natural and cultural aspects, which will attract domestic and foreign nationals.

Keywords: Economy, Tourism, Autoregressive Distributed Lag (ARDL), Oil Sector, Economic Diversification

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1. Introduction

Tourism has been widely acknowledged by scholars as an economic activity that promotes economic growth in both developed and developing countries. This is the postulation of the tourism-led growth hypothesis. It has also become a major source of economic diversification for many countries, such as Kuwait, Abu Dhabi, Dubai, and the United Arab Emirates (Ayeni and Ebohon, 2012; Dwyer and Spurr, 2011; Herb, 2009).

Therefore, the importance of tourism to economic growth, national development, and poverty reduction cannot be overemphasized and has the potential of providing livelihood strategies to the poor. Despite the abundance of oil, Nigeria is said to rank high among the poorest nations of the world. This situation has been attributed to overreliance on oil, whose price fluctuates in the world market. Nigeria offers largely untapped potential for tourism (Raj, 2002). According to Okpoko (2009), the oil sector accounts for over 25 percent of export earnings and about 85 percent of government revenue. Hence, the oil sector is the mainstay of the Nigerian economy; however, with the current challenges faced by the sector (dwindling revenue as a result of a drastic fall in the price of oil in the world market coupled with the illegal bunkering and the unrest in most parts of the Niger/Delta region). Ajadi (2012) also observed that Nigeria continues to depend on exhaustible and irreplaceable crude oil and is constantly faced with fluctuation and uncertainty in the global market.

The need for the diversification of the Nigerian economy from over-dependence on oil to tourism cannot be over emphasized, especially going by the unstable and fluctuating global oil prices in order to minimize the country's vulnerability to macro-economic risks, such as production fall, fall in demand and price, and also a run out of reserves (Olorunfemi and Raheem, 2008). Nevertheless, efforts have been made to translate the huge tourist potentials of Nigeria to pragmatic fortunes. Despite all the initiatives, the causal relationship between tourism and economic growth in Nigeria is not clear; it is uncertain whether the tourism-led growth hypothesis explains the dynamics of the tourism sector of the Nigerian economy. By implication, this study seeks a more reliable result to deduce the economic significance of diversification into tourism in Nigeria vis-a-vis its contribution to the growth of the national economy. The major objective of the study is to evaluate the contribution of tourism sector to the rate of economic growth in Nigeria.

The rest of the paper is divided into 3 sections: Section 2 reviews empirical studies. Section 3 discusses methodology and sources of data as well as estimation technique. Section 4 presents results and discussion, while Section 5 contains the conclusion and recommendation.

2. Review of Empirical Studies

From last few decades there has been a surge in the research related to tourism-growth nexus. The importance of growth and development and its determinants has been studied extensively both in developed and developing countries. Empirical findings on tourism and economic growth have produced mixed findings and sometimes conflicting results despite the common choice of time series techniques as a research methodology. Only a selective literature review will be presented here.

Empirical studies for some developed and developing countries include: Po and Huang (2008); Banday and Ismail (2017); Antonakakis, Dragouni, and Filis (2015); Caglayan et al. (2010); Eugenio-Martin, Morales, and Scarpa (2004); Akan, Arslan, and Isik (2008); Lee and Syah (2018); Khan et al. (2020); Naseem (2021); Adnan and Khan (2013); Wang and Ma (2015); Bayramoglu and Ari (2015); Jeon (2020); Mallick, Mallesh, and Behera (2016); Belloumi (2010); Fayissa et al. (2007); Azeez (2019); Ivanov and Webster (2011); Badulescu et al. (2020); Oh (2005); Balaguer and Cantavella (2002); Khalil et al. (2007); Mirsha et al. (2011); Jamel (2020); Tang et al. (2016); Kibara et al. (2012); Tang and Tan (2013); Ribeiro and Wang (2019); Odhiambo (2011); Ekanayake and Long (2012); Dritsakis (2012); Balaguer and Cantavella-Jorda (2002); Gunduz and Hatemi-J (2005); Durberry (2004); and Brida et al. (2009).

In Nigeria, few researchers have examined various developments in tourism industry. For instance, Yusuff and Akinde (2015) empirical investigation of the contribution of the rapidly developing tourism sector to economic growth in Nigeria. The popular time series data for the period spanning from 1995 to 2013 was analyzed with econometric view statistical package. The findings reveal a unilateral causality and positive long-run between tourism development and economic growth. Thus, the study also confirms tourism-led growth in Nigeria.

In their paper, Ighodaro and Adegboye (2020) examine the impact of tourism on economic growth in Nigeria using a dynamic framework and data covering the 1983-2017 period. Using the autoregressive distributed lags (ARDL) approach to cointegration analysis, the study finds a unidirectional long-run relationship running from tourism to economic growth in Nigeria. Moreover, it was discovered that the direct effect of tourism on growth is weak; rather, a strong channelled impact of tourism sector development on economic growth in Nigeria was established.

The empirical analysis of tourism contributions to GDP in Nigeria was investigated by Asuquo et al. (2016) over the period of 2000 to 2015 using ordinary least square multiple regression technique. The study found a negative relationship between financial contributions of tourism to GDP. Equally, a non-significant relationship was established between growth in tourism and growth in GDP in Nigeria.

Omodero (2019) investigated the contribution of tourism sector to national development in Nigeria between 1981 and 2017 using ordinary least squares method. The regression result of the study established a positive and significant impact of tourism on real GDP with a contribution of 48.96% variation to real GDP in 37 years.

The review of literature shows that a host of researchers across the world have investigated the dynamic relationship between tourism sector development and economic growth in a country and across regions employing various parameters and methodologies. Many of the studies confirmed tourism-led growth hypothesis, while some did not. In Nigeria, the literature is scanty, and a few of the studies reviewed adopted a quantitative approach, and the results were mixed. Hence, it is clear that empirical findings on the effect of tourism on economic growth in Nigeria are still largely debatable. There is, therefore, a need for adoption of methods that provides more reliable results, taking into account other country-specific characteristics, without which statistical findings and interpretation cannot be reliably concluded.

To further the investigation, this study also adopts a quantitative approach and employs recent data (to ensure more realistic results) from reliable sources to investigate the tourism-growth relationship in Nigeria while considering the relative importance of financial development in the country. The inclusion of financial development in the examination of tourism-growth nexus is a unique feature of this study. This is because financial development is considered to have an influencing role in economic growth both theoretically and empirically. For instance, financial institutions promote tourism by offering deposit and lending services to tourists and tourism-related businesses. Banking services for the tourism sector help create more jobs and increase the sector’s contribution to the country’s GDP.

Methodologically, the present study differs from the existing study within Nigerian context, as it seeks to investigate the nexus between tourism and economic growth by making use of Autoregressive Distributed Lag model. This method, developed by Pesaran et al. (2001), is considered superior to other cointegration methods because of its several econometric advantages.

3. Methodology and Data Source

3.1. Data Source

This study used secondary data collected from the World Development Indicators, theglobeconomy.com, indexmundi.com, tradingeconomics.com, countryeconomy.com, and the Statistical Bulletin of the Central Bank of Nigeria (CBN). The data are annual figures for the period stretching from 1990 to 2025.

3.2. Model Specification

In line with Abdul et al (2013) and Akighirand Aaron (2017), the theoretical foundation of the model for this study is the Cobb-Douglas production function given as:

$$Q = AL^a C^\beta \dots\dots\dots(1)$$

where Q is output and L and C are inputs of labour and capital respectively. A, a and β are positive parameters where $a > 0$, $\beta > 0$. The equation tells that output depends directly on L and C, and that part of output which cannot be explained by L and C is explained by A which is the ‘residual’, often called technical change. However, empirical studies have linearized and expanded the Cobb-Douglas function to include other variables for analytical purposes. Improving upon the theoretical postulate described in equation (1) above, economic growth is expressed as a function of tourism (TOUR), and a set of control variable, Z. This is expressed by equation (2) below;

$$Y = f (TOUR, Z) \dots\dots\dots(2)$$

Equation (2) can be transformed into an econometric model of the form:

$$Y_t = \tilde{\Omega}_0 + \tilde{\Omega}_1 TOUR_t + \tilde{\Omega}_2 Z_t + \epsilon_t \dots\dots\dots(3)$$

Equation (3) above will be expanded to accommodate tourism (TOUR), as well as the determinants of traditional growth, such as labour, capital stock, and financial development. Broad money stock (M2) was used to capture financial development. All variables would transmit to the enhancement economic growth. As such:

$$Y_t = \tilde{\Omega}_0 + \tilde{\Omega}_1 \text{TOUR}_t + \tilde{\Omega}_2 \text{LAB}_t + \tilde{\Omega}_3 \text{GFC}_t + \tilde{\Omega}_4 \text{M2}_t + \ddot{U}_t \quad \dots\dots\dots(4)$$

Where Y is Gross Domestic Product (proxy for economic growth), TOUR refers to tourism receipt in Nigeria, GFC is gross fixed capital formation(proxy for capital), LAB is labour force (total), M2 is broad money stock.

Taking the natural logarithm of both sides of equation (4), the estimated model becomes:

$$\text{Log}Y_t = \tilde{\Omega}_0 + \tilde{\Omega}_1 \text{LogGFC}_t + \tilde{\Omega}_2 \text{LogLAB}_t + \tilde{\Omega}_3 \text{LogTOUR}_t + \tilde{\Omega}_4 \text{LogM2}_t + \ddot{U}_t \quad \dots\dots\dots(5)$$

Where $\tilde{\Omega}_0$ is a constant term, $\tilde{\Omega}_1$, $\tilde{\Omega}_2$, $\tilde{\Omega}_3$, and $\tilde{\Omega}_4$ are coefficients or elasticities, which measure changes in the dependent variable due to changes in the explanatory variables, Log represents the natural logarithm of variables (all the variables were transformed into their logs to make for their easy interpretation as elasticities), t is time and \ddot{U} the disturbance term. A priori expectation: $\tilde{\Omega}_1 - \tilde{\Omega}_4 > 0$

3.3. Estimation Techniques

The Augmented Dickey Fuller (ADF) [Dickey and Fuller, 1979] test was used to test for the stationarity of the variables. The ADF test is of the form:

$$\Delta\lambda_t = \delta\lambda_{t-1}\beta_i \sum_{k=1}^n \delta_t \Delta\lambda_{t-1} + \varepsilon_t$$

Where: λ_t is the variable of interest; Δ is the difference operator, t is the time trend and ε_t is the white noise residual of zero mean and constant variance; $(\delta_1, \delta_2, \beta_1, \dots, \beta_m)$ is a set of parameter to be estimated.

Thereafter, the Autoregressive Distributed Lag (ARDL) model was used to achieve the objective of this study. The ARDL approach to cointegration which was introduced originally by Pesaran and Shin (1995). The ARDL model does not require all variables to be integrated of order I(1) as the Johansen framework and it is still applicable if we have I(0) and I(1) variables in our set. It also allows for the model to take a sufficient number lags to capture the data generating process in a general-to-specific modelling framework.

To test whether the lagged levels of the variables in the equation are statistically significant or not, the calculated F-statistics is compared with the critical value tabulated by Pesaran et al. (2001). If the F-statistics is above the upper critical value, the null hypothesis of no long run can be rejected, irrespective of the orders of integration for the time series. Otherwise, if the statistics fall below the lower critical values, then the null hypothesis cannot be rejected.

Once the long run relationship or co-integration has been established, the second stage of testing involves the estimation of the long run coefficients which represents the optimum order of the variables.

Having done this, there is also the need to perform a series of diagnostic tests on the stochastic properties established in the model. This is because the existence of a long run relationship does not necessarily imply that the estimated coefficients are stable. This therefore, involves testing of the residuals (homoskedasticity, serial correlation, and normality), as well as stability tests such as the cumulative sum of recursive residuals (CUSUM) and cumulative sum of squares of recursive residuals (CUSUMsq) to ensure that the estimated model is statistically robust.

4. Empirical Results and Discussion

4.1. Descriptive Analysis

The descriptive statistics refer to the analysis, summary, and presentation of findings related to a data set derived from a sample or entire population. This section reports descriptive statistics of all the variables used in the study, including statistics for central tendencies, measures of dispersion, minimum and maximum values, degree of peakedness, asymmetric value, and the Jarque-Bera statistics of all the raw data (series) used in the study. Statistics reported in this section revealed a measure of central location and how individual variable values are

spread on each side of the centre via the root mean squared deviation (standard deviation). The peakedness of each variable is given by the kurtosis statistics, and the symmetric nature given by skewness value, while the normality status of each of the series is reflected by the Jarque-Bera statistics.

Table 2: Descriptive Statistics

	LAB	GFC	M2	TOUR	Y
Mean	47412455	4.95E+10	1.09E+13	4.94E+08	2.36E+11
Median	47728345	4.96E+10	3.09E+12	2.33E+08	2.06E+11
Maximum	64479540	1.24E+11	3.86E+13	2.62E+09	5.47E+11
Minimum	31787600	1.23E+10	5.76E+10	30000000	2.78E+10
Std. Dev.	9709521.	3.07E+10	1.29E+13	6.08E+08	1.80E+11
Skewness	0.009939	0.796628	0.902721	1.894228	0.229702
Kurtosis	1.820582	2.896663	2.380182	6.509151	1.420945
Jarque-Bera	1.855229	3.398860	4.858388	35.55538	3.605955
Probability	0.395496	0.182788	0.088108	0.000000	0.164807
Sum	1.52E+09	1.58E+12	3.50E+14	1.58E+10	7.54E+12
Sum Sq. Dev.	2.92E+15	2.93E+22	5.15E+27	1.15E+19	1.00E+24
Observations	36	36	36	36	36

Source: Author's computation using Eviews 10

Table 2 shows the descriptive statistics of variables (in their raw form) based on observations collected over the period spanning from 1990 to 2021. As reported in Table 2, the average value of total labour force (LAB), gross fixed capital formation (GFC proxy for capital), broad money stock (M2), tourism receipt (TOUR), and Gross Domestic Product (Y) stood at 47412455, 4.95E+10, 1.09E+13, 4.94E+08, and 2.36E+11, respectively. The standard deviation illustrates the spread of the values from the mean. The result shows that LAB has a spread of 9709521, GFC has 3.07E+10, M2 has 1.29E+13, TOUR is having 6.08E+08, and Y has a spread of 1.80E+11.

Skewness statistics reported in Table 2 revealed that all the variables used in the study were positively skewed. Since the skewness is positive for all the variables, that shows the data are positively skewed or skewed right, meaning that the right tail of the distribution is longer than the left.

The kurtosis of a normal distribution is 3. If a given distribution has a kurtosis less than 3, it is said to be platykurtic, which means it tends to produce fewer and less extreme outliers than the normal distribution. If a given distribution has a kurtosis greater than 3, it is said to be leptokurtic, which means it tends to produce more outliers than the normal distribution. The reported kurtosis statistics revealed that almost all the variables are platykurtic by their distribution peakedness. In specific terms, reported kurtosis statistics stood at 1.820582, 2.896663, 2.380182, and 1.420945 for LAB, GFC, M2, and Y, respectively. Except TOUR (6.509151), that is leptokurtic.

The Jarque-Bera test is a goodness-of-fit test that determines whether or not sample data have skewness and kurtosis that matches a normal distribution. The test statistic of the Jarque-Bera test is always a positive number, and if it's far from zero, it indicates that the sample data do not have a normal distribution. In this case, the Jarque-Bera statistics reported in Table 4 stood at 1.855229, 3.398860, 4.858388, 35.55538, and 3.605955 for LAB, GFC, M2, TOUR, and Y, respectively. These values are far from zero. This demonstrates that all these variables are not normally distributed.

4.2. Correlation Analysis

Table 3 reports the correlation coefficient of pairs of variables used in the study. The correlation matrix shows the correlation values, which measure the degree of linear relationship between each pair of variables. The correlation values fall between -1 and +1. The results showed existence of strong positive correlation between LOGY and LOGTOUR, LOGY and LOGM2, LOGY and LOGLAB, LOGY and LOGGFC in the period covered in the study.

Table 3: Correlation Matrix

	LOGY	LOGTOUR	LOGM2	LOGLAB	LOGGFC
LOGY	1				
LOGTOUR	0.887	1			
LOGM2	0.956	0.922	1		
LOGLAB	0.946	0.909	0.991	1	
LOGGFC	0.961	0.821	0.905	0.919	1

Source: Author's computation using Eviews 10

4.3. Unit Root Analysis

This section presents summary of result of unit root test carried out to ascertain the stationary property, i.e., predictability properties of the variables. The test showed the order of integration of each of the variables, as presented in Table 4. According to the results, LOGTOUR, LOGM2, and LOGGFC were stationary at level; hence, their order of integration is zero. On the other hand, LOGY and LOGLAB were non-stationary at level but turned out to be stationary after the first difference. Therefore, their integration order is 1. This mixed order of integration is the reason for the use of ARDL bound test instead of Johansen cointegration test.

Table 4: Augmented Dickey Fuller (ADF) Unit Root Results

Variable	ADF test				Order of integration
	Levels		1 st difference		
	Intercept	Trend & Intercept	Intercept	Trend & Intercept	
LOGY	-0.498327	-1.363750	-4.297787*	-4.229487*	I(1)
LOGTOUR	-1.485985	-3.589647**	-5.330946*	-5.238406*	I(0)
LOGM2	-3.596363*	-0.278832	-2.638237***	-3.477423***	I(0)
LOGLAB	-1.549532	-2.108831	-3.673196*	-2.662196	I(1)
LOGGFC	0.056568	-3.609067**	-4.082243*	-4.014180**	I(0)

Note: ADF test was performed using Schwarz information criterion and the automatic lag selection set as 7 lags. Also, *, ** and *** imply statistical significance at 1%, 5% and 10% levels respectively.

Source: Author's computation using Eviews 10

4.4. ARDL Bounds Test

The bounds test procedure is based on the F-test for investigating the presence of long-run linkage between the examined variables, and it tests for the joint significance of lagged level variables involved in the model. For the F-test, the selection of maximum lag length is very important. The observations in the study are annual, and sample size is 32 with 4 parameters. For such a small sample size as suggested by Pesaran et al. (2001), the study selected a maximum lag length of 3 for the dependent variable and independent variables. In addition, the specification was with constant and trend. Also, the model is specified in its original form where Y (GDP) is the dependent variable and TOUR, LAB, GFC, and M2 are independent variables. The estimated bounds and F-test results are summarised in Table 5.

Table 5: F-Bounds Test

Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
Asymptotic: n=1000				
F-statistic	10.82454	10%	3.03	4.06
K	4	5%	3.47	4.57
		2.5%	3.89	5.07
		1%	4.4	5.72

Source: Author's computation using Eviews 10

Based on the results in Table 5, the computed F-statistic value of 10.82454 is greater than the upper bound critical value of 5.72 at a 1% significance level, describing that there exists a unique co-integration relationship between economic growth and the indicators of tourism as well as other variables of interest. This suggests that these variables co-move in the long run and any short-run deviation in their relationships would return to equilibrium in the long run. Having established the presence of a co-integrating relationship among the variables, the next step in the ARDL approach was to determine the long-run coefficients.

4. Regression Results

4.1. Long-Run Estimates

To determine the long- and short-run coefficients of the model in this study, the model selection criterion was by Akaike Information Criterion; an optimally determined lag length of ARDL (3, 2, 3, 3, 3) was used, and the results are presented in Table 5. The results revealed that the long-run coefficient of gross fixed capital formation (LOGGFC) indicated a positive impact on economic growth that was significant at 5% level. This means that a percentage increase in fixed capital formation (LOGGFC), holding other explanatory variables constant, triggered an increase of about 0.56% in long-term economic growth. This result is contrary to Nweke, Odo, and Anoke (2017) and Onwioduokit (2019), who revealed that gross capital formation (GCF) has a positive insignificant impact on real gross domestic product (RGDP) in Nigeria.

In the same vein, the long-run coefficient of broad money stock (LOGM2), consistent with a priori expectations, was accompanied by a positive effect on economic growth, and it is significant at 1% level. Invariably, a percentage point increase in broad money stock (LOGM2) is expected to increase economic growth by approximately 0.97% *ceteris paribus*. The result is consistent with the findings of Onwuteaka, Okoye, and Molokwu (2019) and Ayodeji and Oluwole (2018), who reported a significant positive impact of broad money stock (LOGM2) on long-term economic growth in Nigeria.

However, the long-run coefficient of tourism receipts in Nigeria (LOGTOUR) portrayed a negative relationship with economic growth that was significant at 1% level. The result revealed that a percentage increase in the tourism receipt (LOGTOUR), other things remaining equal, was associated with about 0.32% decline in gross domestic product (proxy for economic growth). The negative sign of this variable is inconsistent with a priori expectation.

This result aligns with Asuquo et al. (2016), which found a negative relationship between tourism and growth in Nigeria. According to the T&T competitiveness report by the World Economic Forum in 2017, Nigeria ranks low, 129th out of the 136 African countries, compared to Ghana and South Africa, which rank 120th and 53rd, respectively (Agusto.com, 2017). Factors for this low ranking include low prioritisation of the tourism industry by the government, poor infrastructural facilities, and insecurity challenges. All these have resulted in an inertia towards tourism in the country, reflected in an increase in outbound travel to destinations like Ghana and South Africa—and resulting in loss of revenue.

Finally, the long-run coefficient of total labourforce (LOGLAB) was consistent with a-priori expectation and elicited a positive impact on economic growth. It showed that a percentage increase in total labour force (LOGLAB), other things remaining equal, will result in an increase of about 2.83% in long-term economic growth. Unfortunately, this seems to be statistically insignificant at any of the convention significance levels of 1%, 5% or 10%.

Table 6: Long Run ARDL Result

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LOGGFC	0.564077	0.194200	2.904615	0.0175**
LOGLAB	2.827965	2.406120	1.175322	0.2700
LOGTOUR	-0.319951	0.094104	-3.399977	0.0079*
LOGM2	0.964767	0.168788	5.715847	0.0003*

Note: *, ** and *** imply statistical significance at 1%, 5% and 10% levels respectively.

Source: Author's computation using Eviews 10

4.2. Short-Run Estimates

To determine the short-run impact of tourism on economic growth in Nigeria, the study proceeded to estimate an Error Correction Model (ECM) associated with the long-run relationship. The error correction term (ECM(-1)), representing the speed of adjustment needed to restore equilibrium in the dynamic model after a disturbance, follows a priori expectation as it was both negative and statistically significant at 1% level. Its value of -0.708906 implies that a shock to economic growth in the current period will be restored at a speed of adjustment of about 70.89% in the next period. Put differently, the rate of adjustment of a short-run disequilibrium in economic growth was moderately fast, as about 71% of the divergence in economic growth as a result of a current period shock will converge towards long-run equilibrium in the next period (see Table 7).

Table 7: Short Run ARDL Results

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-40.04356	4.533998	-8.831843	0.0000*
@TREND	-0.115268	0.012849	-8.970741	0.0000*
D(LOGY(-1))	0.130454	0.101887	1.280382	0.2324
D(LOGY(-2))	-0.188703	0.060222	-3.133486	0.0121**
D(LOGGFC)	0.612153	0.061513	9.951560	0.0000*
D(LOGGFC(-1))	-0.260242	0.107097	-2.429964	0.0380**
D(LOGLAB)	-2.145788	0.962250	-2.229968	0.0527**
D(LOGLAB(-1))	-0.427203	1.023324	-0.417466	0.6861
D(LOGLAB(-2))	-3.635077	1.006495	-3.611618	0.0056*
D(LOGTOUR)	-0.010529	0.022994	-0.457906	0.6579
D(LOGTOUR(-1))	0.092276	0.027209	3.391300	0.0080*
D(LOGTOUR(-2))	0.124458	0.024236	5.135313	0.0006*
D(LOGM2)	0.200029	0.094151	2.124556	0.0626***
D(LOGM2(-1))	-0.205594	0.097275	-2.113537	0.0637***
D(LOGM2(-2))	-0.293451	0.107988	-2.717430	0.0237**
ECM(-1)	-0.708906	0.080177	-8.841790	0.0000*

Note: *, ** and *** imply statistical significance at 1%, 5% and 10% levels respectively.

Source: Author's computation using Eviews 10.

From Table 7, the current year value of gross domestic product (proxy for economic growth) was significantly affected by the two-year lagged value of gross domestic product. Specifically, a percentage increase in two-year lagged value of gross domestic product, D(LOGY(-2)), showed a negative effect on current year value of gross domestic product (economic growth) and was significant at 5%. Also, evidence of a significant negative relationship was observed between one-period lagged value of gross fixed capital formation D(LOGGFC(-1)) and the current rate of economic growth at the 5% level of significance, suggesting that a percentage increase in one-period lagged value of gross fixed capital formation will, other things remaining equal, produce a decrease of about 0.26% in the current rate of economic growth (gross domestic product).

In a similar manner, the present level of total labour force D(LOGLAB) D(LOGLAB) was associated with a negative effect on current rate of economic growth that was significant at 5% level, indicating that a percentage increase in current level of total labour force, results in about 2.15% decrease in current rate of economic growth (GDP). Also, the two-year period lagged value of total labour force D(LOGLAB(-2)) D(LOGLAB(-2)) showed an inverse relationship with the current rate of economic growth, and it was statistically significant at 1% level.

Another reported negative outcome was depicted between one period lagged value of broad money stock D(LOGM2(-1)) and the current rate of economic growth (GDP). Similarly, the two-period lagged value of broad money stock D(LOGM2(-2)) displayed inverse association with the current rate of economic growth (GDP). Both results were statistically significant at 5% and 10% levels for D(LOGM2(-2)) and D(LOGM2(-1)), respectively. In contrast, the current value of broad money stock D(LOGM2) exposed a positive relationship that was significant at 10% level.

Nevertheless, the current year value of gross domestic product (proxy for economic growth) was significantly affected by the present value of gross fixed capital formation D(LOGGFC). Specifically, a percentage increase in present value of gross fixed capital formation showed a positive impact on current year value of gross domestic product. This relationship was statistically significant at 1% level.

The one-year lagged value of tourism receipt D(LOGTOUR(-1)) indicated a positive effect on current rate of economic growth that was significant at 1% level. Also, the two-year lagged value of tourism receipt D(LOGTOUR(-2)) exposed a positive relationship that was significant at 1% level. These results regarding the positive link between tourism and growth are matching with the results of Azam, Khan, and Khan (2020); Azam (2020); and Yazdi (2019).

4.3. Diagnostic Analysis

To ensure the overall stability of the estimated models, several diagnostic analyses were carried out. The two common residual tests of serial correlation which are Correlograms Q-Statistics and the Breusch-Godfrey LM tests were deployed. Concerning the Correlogram, Table 8(see Appendix) displays the autocorrelation and partial autocorrelation functions up to a specified order of 16 lags. The Q-statistics are insignificant at all lags, indicating insignificant serial correlation in the residuals. That is, there is no presence of serial correlation.

The Breusch-Godfrey Test was used to test for serial correlation beyond the first order, and is valid in the presence of lagged dependent variables. The Breusch-Godfrey LM tests for serial correlation depicted in Table 9 (see Appendix) reports statistic labeled “F-statistic” and “Obs*R-squared” statistic. Consequently, the “Obs*R-squared” statistic for the LM test reject the hypothesis of no serial correlation up to lag order five while the “F-statistic” statistic accept the hypothesis of no serial correlation. Since emphasis is on the F-statistics, that means there is absence of serial correlation in the model.

Since, homoscedasticity assumption must be satisfied for regression results to be valid. Therefore, testing for the presence of heteroscedasticity in a linear regression model is inevitable. The null hypothesis states that no heteroskedasticity exists. Table 10 (see Appendix) shows that the null hypothesis cannot be rejected. The Jarque-Bera normality test statistics in Figure 1 indicates that the residual of the model is normally distributed since the p-value of 0.803424 is greater than the significance level of 5% i.e. $0.803424 > 0.05$.

Finally, cumulative sum of recursive residuals (CUSUM) and CUSUM of square tests were also applied to assess parameter stability. Figures 2 and 3 (see Appendix) plot the results for CUSUM and CUSUMSQ of squares tests. The results indicate the absence of any instability of the coefficients because the plot of the CUSUM and CUSUMSQ statistic fall inside the critical bands of the 5% confidence interval of parameter stability, meaning, the short-run and long-run coefficients are stable.

5. Summary, Conclusion and Recommendations

5.1. Summary

Tourism has been widely acknowledged by scholars as an economic activity that promotes economic growth and has become a major source of economic diversification for many developed and developing countries. In view of this, the main objective of this study is to evaluate the contribution of tourism sector to Nigeria’s economy. The sample period was from 1990-2025. The variables concerned were Gross Domestic Product; Gross fixed capital formation, Broad money (M2), Total Labor force, and international tourism receipts.

Applying ADF unit root test and autoregressive distributed lag (ARDL) model technique, the results revealed that the long-run coefficient of gross fixed capital formation (LOGGFC) indicated a positive impact on economic growth, broad money stock (LOGM2) and economic growth depicted positive significant relationship, the long-run coefficient of tourism receipt in Nigeria (LOGTOUR) portrayed a negative relationship with economic growth, and labor force (LOGLAB) showed a positive significant impact on economic growth in the long run.

To determine the short-run impact of tourism on economic growth in Nigeria, the study proceeded to estimate an Error Correction Model (ECM) associated with the long-run relationship. The short-run results showed that the two-year lagged value of gross domestic product D(LOGY(-2)) showed a negative significant effect on current year value of gross domestic product (economic growth), and the present level of total labour force (D(LOGLAB)) was associated with a negative significant effect on current rate of economic growth.

Another reported negative outcome was depicted between one period lagged value of broad money stock $D(\text{LOGM2}(-1))$ and the current rate of economic growth (GDP). Similarly, the two-period lagged value of broad money stock $D(\text{LOGM2}(-2))$ displayed inverse association with the current rate of economic growth (GDP). Nevertheless, the current year value of gross domestic product (proxy for economic growth) was significantly affected by the present value of gross fixed capital formation $D(\text{LOGGFC})$. The one-year lagged value of tourism receipt $D(\text{LOGTOUR}(-1))$ indicated a positive effect on current rate of economic growth.

5.2 Conclusion

Conclusively, the empirical results from the study showed that tourism and economic growth in Nigeria exhibit inverse relationship in the long run. However, the capability of the tourism industry in Nigeria to generate sustainable revenues that will rival current earnings from crude oil and contribute to the economic growth cannot be overemphasized.

Nigeria's experiences in the recent past clearly demonstrate that crude oil and mineral resources are non-renewable and have very limited potential for addressing the development challenges that face the country today and over the medium and long term. These include providing gainful employment for the masses of school leavers and various categories of underemployed workers, addressing the challenge of poverty, and tackling the environmental challenges all arising from the high rate of incidental and situational urban migration, desertification, floods, and other natural disasters." This reality makes diversification into tourism a rational consideration.

5.3 Recommendation

Based on the empirical evidence emanating from the study, for achievement of a long-run relationship between tourism and economic growth in Nigeria, the following are recommended:

To promote tourism in Nigeria, a synergy of all levels of government must be achieved. The government should allocate appropriate budget to develop the infrastructure and recreational points in the areas rich in natural and cultural aspects, which will attract domestic and foreign nationals. In the same vein, the government should create business opportunities for the local communities to attract tourists' arrivals and spending, thus raising the socioeconomic standards of living of the local communities.

Additionally, provision of adequate security for both domestic and foreign tourists should be ensured by the government, tax incentives to hotels and tourism related industries, and investment in basic infrastructure such as roads, better airport facilities, and good transport systems. These will go a long way to ensure stable tourism demand for the country.

To promote sustainable growth, attention should be focused on long-run policies, for example, the creation of modern, efficient, and strong financial institutions that can drive Nigeria's economic growth. In this regard, efforts should be devoted to deepening the financial sector, especially the microfinance system in Nigeria. Moreover, there is urgent need for legal reforms to fast-track markets and institutions for efficient credit system.

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